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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

05-AMRC-0451

OCT 11 2005

Mr. R. G. Gallagher, President
and Chief Executive Officer
Fluor Hanford, Inc.
Richland, Washington 99352

Dear Mr. Gallagher:

CONTRACT NO. DE-AC06-96RL13200 - SURVEILLANCE OF RADIOLOGICAL AIR PERMITTING COMPLIANCE STATUS, HANFORD SITE, 400 AREA FAST FLUX TEST FACILITY (FFTF)

Enclosed please find the RL "Surveillance of Radiological Air Permitting Compliance Status, Hanford Site, 400 Area, FFTF." Compliance with environmental permits is a requirement of the Project Hanford Management Contract. To assess this compliance, RL performed a surveillance of the Fluor Hanford, Inc. (FHI) management and implementation of the radiological air permitting compliance status at FFTF.

Overall, the surveillance concludes that the documentation does demonstrate regulatory compliance with radiological air regulations, conditions and limitations in the facility's one Notice of Construction, and obligations specified in the Hanford Site Air Operating Permit. No findings or issues were identified. However, the surveillance does make one observation for improvement and identifies several good work practices. These are identified in the enclosed surveillance report.

FHI employees, Mark E. Eby and Norman R. Dahl, examined and commented on a draft of the surveillance report for factual accuracy before it was finalized. Thank you for the helpful and courteous manner your staff displayed throughout the surveillance process.

If you have questions, please contact me or your staff may contact Dave Evans, Deputy Assistant Manager for the River Corridor, on (509) 373-9278.

Sincerely,

Keith A. Klein
Manager

AMRC:DHC

Enclosure:
See Page 2

cc w/encl:
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Administrative Record (Notice of Construction Number FFTF-402-1; FFTF Radiological Air Permitting Surveillance)
Environmental Portal

U.S. DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE
SURVEILLANCE OF
RADIOLOGICAL AIR PERMITTING COMPLIANCE STATUS
HANFORD SITE 400 AREA FAST FLUX TEST FACILITY (FFTF)
RICHLAND, WASHINGTON
S-05-AMRC-FHI-FFTF-001

September 22, 2005

Performed by:

Douglas H. Chapin, RL Assistant Manager for River Corridor, FFTF Project Surveillance Team Leader

Mary F. Jarvis, RL Environmental Services Division, Team Member

SURVEILLANCE REPORT S-05-AMRC-FHI-FFTF-001

(Continued)

EXECUTIVE SUMMARY

Compliance with environmental permits is a requirement of the U.S. Department of Energy's Project Hanford Management Contract, currently with Fluor Hanford, Inc. (FHI). To assess this compliance, the U.S. Department of Energy, Richland Operations Office (RL) performed a surveillance of FHI's management and implementation of State of Washington Department of Health (WDOH) regulated radiological air emissions at the Fast Flux Test Facility (FFTF), located in the 400 Area of the Hanford Site.

On September 12, 2005, the RL surveillance team reviewed samples from compliance records and license required deliverables to judge if the FHI-FFTF Contractor (Contractor) was able to demonstrate compliance with the conditions and limitations of any Notice of Construction (NOC) and Hanford Air Operating Permit (AOP) requirements for other stack control equipment, monitoring, and reporting. Overall, the surveillance concluded that the documentation demonstrated regulatory compliance with the NOC conditions and limitations, and other regulatory requirements. The surveillance concluded there were no findings, issues, or observations; a good practice was identified.

The Contractor demonstrated from the documentation that the facility is in compliance with all radiological air emission regulatory requirements. The documentation was well organized, records are compliantly maintained, and facility personnel are knowledgeable of applicable laws, regulations, license and Permit requirements, in particular as they apply to the facility. The Contractors interviewed (Mr. Norman R. Dahl and Mr. Mark E. Eby) were very helpful, knowledgeable, and well prepared.

1.0 Scope of Surveillance

The Project Hanford Management Contract Number DE-AC06-96-RL-13200, Part I-The Schedule, Section C, Statement of Work, C.5.1Environment, Safety, Health and Quality Assurance, Subsection C. 5.1.1 Environmental Protection, "Requirements," states that "the Contractor shall manage assigned facilities and operable units to assure compliance with environmental permits, requirements, and agreements." To verify this compliance, the surveillance examined a sample of documents submitted to WDOH and RL, as well as documents maintained to demonstrate compliance with the requirements of the NOC and the AOP. The surveillance was performed at FFTF on September 12, 2005.

WDOH is planning to resume minor stack emissions inspections in the near future. Of particular interest to WDOH is FFTF and they have indicated FFTF will be the first facility inspected. WDOH's findings from the 209-E Facility minor stack inspection resulted in an expenditure of ~ $350,000. As a result, RL decided it was prudent to perform a surveillance to ascertain FFTF's radiological air compliance status. To this end, the RL Surveillance Team followed the RL Integrated Management System (RIMS) procedure for performing RL Contractor surveillances. The initial step is to complete a "Surveillance Planning Form," which includes "Performance Expectations"

or "lines of inquiry." These are in the form of questions, which are asked during the surveillance and documents, which will be requested of the Contractor during the conduct of the surveillance. The "Surveillance Planning Form" was sent to the Contractor in advance of the surveillance on August 29, 2005. The Performance Expectations are drawn directly from the Washington Administrative Code regulations 246-247, the Federal Clean Air Act (CAA), and requirements of the Hanford AOP.

According to the RIMS procedure, after the draft surveillance report is complete, a copy is shared with the Contractors surveilled for them to review for factual accuracy. The Contractor comments are incorporated prior RL's formal issuance of the report.

2.0 Summary of Results

This section summarizes the surveillance by describing the activities the surveillors performed. The following performance expectations are presented as lines of inquiry for the surveillance. These requirements are found in NOCs, the Hanford AOP; the WAC, or the federal CAA: Consequently, the surveillance team examined documentation that demonstrated compliance with these requirements. The surveillors asked the following questions, compiled the results, and formed conclusions:

Question 1. Stacks

- How many stacks are there at FFTF? There are five minor emission units or stacks.
- Numbers? 437-1-61; 437-MN & ST; FFTF-CB-EX; FFTF-HT-TR; and FFTF-RE-SB.
- Do they have approved radiological air NOCs? No. All five are grandfathered.
- NOC Numbers? There is only one radiological air NOC at FFTF; it is FFTF-402-1 "Construction and Operation of Sodium Storage Facility."

Result: The five grandfathered stacks are in the AOP as is the NOC. The facility certifies compliance to conditions and limitations annually. Therefore, this regulatory requirement is satisfied.

Question 2. Notices of Construction

- Please identify the Conditions and Limitations in each NOC. There is one NOC at FFTF as noted in Question 1 above.
- How do you demonstrate compliance with each? Compliance to each condition and limitation is certified to annually.

Result: Contractor supplied a copy of the sole NOC for FFTF and showed where the NOC is contained in the AOP. Contractor also showed input to the Annual AOP Compliance Certification Report which demonstrates that each condition and limitation

in the NOC is examined to verify that it is being followed and certified under penalty of law that the statement is accurate. Therefore, this regulatory requirement is satisfied.

Question 3. Shut Downs

- Has a stack been shut down? No.
- Numbers? Not applicable.
- Please provide copies of documentation (e-mails or letters). Not applicable.
- Has there been an emergency shut down? Not applicable.

Result: Not applicable.

Question 4. AOP

- Is each NOC in the AOP? Yes.
- Which ones? There is only one radiological air NOC at FFTF; it is FFTF-402-1 "Construction and Operation of Sodium Storage Facility."
- Numbers? FFTF-402-1; NOC ID 65; AIR 02-1101.

Result: Therefore, this regulatory requirement is being satisfied.

Question 5. NOCs

Which stacks do NOT have an approved NOC? None of the five stacks have approved NOCs; they are all grandfathered.

Result: Therefore, this regulatory requirement is being satisfied.

Question 6. As Low As Reasonably Achievable Control Technology (ALARACT)

- Is there an approved ALARACT for any one of the stacks? No.
- Which stack(s)? Not applicable.
- Please provide a copy. Not applicable.
- How do you demonstrate compliance to the requirements in the ALARACT? Not applicable.

Result: Therefore, this Regulatory requirement is satisfied.

Question 7. Abatement Technology

- What type of abatement technology is in place by stack?
- 437-1-61: High Efficiency Particulate Air (HEPA) filtration
- 437-MN & ST: HEPA filtration
- FFTF-CB-EX: standby HEPA filtration

- FFTF-HT-TR: standby HEPA filtration
- FFTF-RE-SB: No filtration
- FFTF-402-01 (NOC): HEPA filtration

Result: The Contractor could not readily provide the technical basis for why there is no provision for HEPA filtration for the FFTF-RE-SB stack. Perhaps it is because the radioactive source is contained in a water matrix, which does not work well with HEPA filtration. Surveillors suggest having this technical basis ready and available to provide the regulators if asked during an inspection. Otherwise, the regulatory requirement for abatement appeared satisfied.

Question 8. Minimize Emissions

- What practices are in place to minimize emissions by stack?

Result: Contractor discussed the design of facility; stack abatement technology, Conduct of Operations, ALARA, Worker Health and Safety programs, training, and drills. These programs and activities are in place to among other benefits, minimize stack emissions.

The surveillance concludes that the regulatory requirement is being satisfied.

Question 9. HEPA Filtration

- Do any of the stack exhaust systems have HEPA filters? Yes, see response to Question 7 above.
- Which stack(s)? See response to Question 7 above.
- What is done to maintain the HEPA filters? Maintenance follows schedule required by the AOP for HEPA filters.

Result: Same as the Results for Question 7 above.

Question 10. Efficiency Testing

- Are efficiency tests performed? Yes, efficiency tests are performed annually as required by the AOP or the NOC.

- Which stack(s)? Efficiency tests are performed on all the stacks except FFTF-RE-SB, since it has no HEPA filter. Efficiency testing is also performed on the HEPA filters covered by the NOC.

Result: The regulatory requirement for efficiency testing is being satisfied.

Question 11. Air Monitoring

- What is the required monitoring? Monitoring is specified in the AOP for the minor stacks and the NOC for work covered under the license.
- Which stack(s)? Stack sampling is conducted on all 5 minor stacks.
- Is far field monitoring relied on? No.
- Is near field monitoring relied on? Yes in the NOC. Also Health Physics Technicians take wipe samples and smears which are used for monitoring information purposes.

Result: The Contractor provided information to demonstrate that air monitoring was indeed performed and reported as required. The surveillance concludes that the regulatory requirement for air monitoring is being satisfied.

Question 12. Sampling

- Is a sample collected? Yes.
- Which stack(s)? All.
- What is the sampling frequency commitment? 4 weeks per year for each of the 5 minor stacks
- Is a schedule listed in the AOP? Yes.

Result: The Contractor provided information to demonstrate that samples were indeed collected from the stacks and reported as required. Therefore, the surveillance concludes that the regulatory requirement for sampling is being satisfied.

Question 13. HEPA Filtration

- Does the AOP require HEPA filtration? Yes.

Which stack(s) have it? Please see response to Question 7 above.

Result: Same as Result for Question 7 above.

Question 14. Support for Minor Emission Status

- How do you know you are a minor stack, i.e., potential to emit (PTE) <0.1millirem per year (mrem/year)? Results of two assessments of the PTE.
- Which stack(s)? All five stacks. Please provide documentary evidence, examples might include Documented Safety Analysis, which contains the basis for the inventory and grand total of grams of radionuclides. Contractor provided two reports as evidence.

Result: The Contractor provided two technical documents as evidence in support of the five stacks PTE of <0.1mrem/year. These are:

- FHI Stack Assessment for 40 Code of Federal Regulations (CFR) 61, Subpart H, Nondestructive Assessment (NDA) 431-1-61 and 437-NM and ST and Stack Assessment for Subpart H Release Factors for Appendix D, Source Assessment FHI August 28, 2002
  (FHI 2002); and
- PNNL Stack Assessment for 40 CFR 61, Subpart H. December 2, 1993 [Pacific Northwest National Laboratory PNNL), 1993).

FHI 2002 covers two stacks --- 431-1-61 and 437-NM&ST; while PNNL 1993 covers all five stacks. Both documents rely on NDA testing of HEPA filters to determine inventory and extrapolating from stack samples. A highly conservative release factor of 1 is used in the air model, which assumes that all the radionuclide is release to the ambient air.

The Contractor appears to have demonstrated accessibility to adequate documentation on the radioactive inventory, its physical form, and its potential to emit. However, the documentation is highly difficult to interpret even for a person who is technically verse on the subject matter. The reports lack an overview or executive summary. The surveillors recommend providing a technical summary describing what was performed to follow one through the maze of tables and scientific notations.

Question 15. Latest Stack Assessment

- What is your latest stack assessment for potential emission? FHI Stack Assessment for 40 CFR 61, Subpart H, Nondestructive Assessment (NDA) 431-1-61 and 437-NM&ST and Stack Assessment for Subpart H Release Factors for Appendix D, Source Assessment FHI August 28, 2002
- (FHI 2002)
- By stack(s)? 431-1-61 and 437-NM&ST

Result: The surveillance concludes that the regulatory requirement is being satisfied.

Question 16. Open Inspection Items

Have open items from previous inspections been closed? Please provide evidence, if applicable.

Result: There have been no open items from any past inspections.

3.0 Surveillance Results

This section describes any findings, issues, observations, and good practices identified during the surveillance; there were no findings or issues identified during the surveillance. There were however, two observations and a good practice identified.

Observations

Tracking Number S-05-AMRC-FHI-FFTF-001

Abatement Technology: When asked what radiological air emissions abatement technology is in place by stack, the Contractor could not readily provide the technical basis for why there is no provision for HEPA filtration for the FFTF-RE-SB stack. Perhaps it is because the radioactive source is contained in a water matrix, which does not work well with HEPA filtration. Perhaps the lack of HEPA filtration was negotiated with the regulatory agency. Nonetheless, the RL Surveillance Team thinks the Contractors should know the reason. The surveillors suggest that the Contractors have the technical basis ready and available to provide the regulators, if asked during an inspection. Otherwise, the regulatory requirement for abatement appears satisfied.

RL Lead Assessor Closure Required: YES [ ] NO [X]

Tracking Number S-05-AMRC-FHI-FFTF-0002

Support for Minor Emission Status: The Contractor was asked to provide the basis for knowing that the stack and other emissions are minor, i.e., PTE <0.1mrem/year. The Contractor appears to have demonstrated accessibility to adequate documentation on the radioactive inventory, its physical form, and its potential to emit. However, the documentation is highly difficult to interpret even for a person who is technically verse on the subject matter. Moreover, the reports lack an overview or executive summary. The surveillors recommend providing a technical summary describing what was performed to follow one through the maze of tables and scientific notations.

RL Lead Assessor Closure Required: YES [ ] NO [X]

Good Practice or Strength

The Contractors (Mr. Mr. Norman R. Dahl and Mr. Mark E. Eby) were both very well prepared for the surveillance. They did an excellent job of demonstrating compliance with the regulations, and were both knowledgeable of applicable air regulations, the NOC, and Hanford Air Operating Permit. Both gentlemen were very patient, courteous, and cooperative in answering questions and providing requested reports, letters, and copies. The Contractors are familiar with the facility, applicable regulations, and supporting regulatory documents. The Contractor's files and records are in excellent order; they were able to retrieve records and did so immediately when requested.

RL Lead Assessor Closure Required: **YES [ ]** **NO [X]**

4.0 Conclusions

Based on this surveillance, it is the opinion of these surveillors, that FHI is doing an excellent job of implementing requirements and adhering to the conditions and limitations of the NOC, the Hanford AOP, and other air regulations related to radiological air emissions at FFTF. The surveillance identified two observations and several good practices. The Contractors are to be commended for doing an excellent job in this area of environmental compliance.